

## EAST Search History

| Ref # | Hits | Search Query  | DBs   | Default Operator | Plurals | Time Stamp       |
|-------|------|---|---|------------------|---------|------------------|
| L1    | 1    | motor and inverter and (periodical\$3 with (switching adj over) with phase)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2007/12/12 15:21 |
| L2    | 108  | motor and inverter and ((switching near3 over) with phase)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2007/12/12 16:04 |
| L3    | 25   | 2 and (first near3 voltage) and (second near3 voltage)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2007/12/12 15:02 |
| L4    | 0    | 3 and (sequenc\$6 same ((predeterm\$3 or command\$6 or target\$4) with ((frequency near3 field) or (motor near3 load))))                                  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2007/12/12 15:23 |
| L5    | 1    | 3 and (pulsat\$6 with switch\$3).   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2007/12/12 15:07 |
| L6    | 53   | motor and inverter and ((cycl\$3 or periodical\$3) with (switching near4 phase)) and (positive near3 voltage) and (negative near3 voltage)                | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2007/12/12 15:58 |
| L7    | 0    | 6 and (sequenc\$6 same ((predeterm\$3 or command\$6 or target\$4) with (frequency near3 field)))  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2007/12/12 15:24 |
| L8    | 0    | 6 and ((predeterm\$3 or command\$6 or target\$4) with (frequency near3 field))  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2007/12/12 15:24 |
| L9    | 39   | motor and (voltage near3 positive) and (voltage near3 negative) and (phase with switching with (periodic\$5 or cyclical\$3))                              | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2007/12/12 16:02 |
| L10   | 0    | 9 and ((continuous\$3 near3 connect\$6) with phase with (input near3 voltage))  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2007/12/12 16:01 |
| L11   | 318  | motor and (voltage near3 positive) and (voltage near3 negative) and (phase near5 switch\$3) and (phase near3 connect\$6) and (periodic\$5 or cyclical\$3) | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2007/12/12 16:10 |

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|     |     |   |   |    |    |                  |
|-----|-----|---|---|----|----|------------------|
| L12 | 202 | 11 and inverter   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 16:04 |
| L13 | 0   | 12 and (((switching near3 over) with (switch or transistor or phase) with voltage) same ((one or another or different or second or first) near6 phase))   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 16:09 |
| L14 | 65  | mótor and (voltage near3 positive) and (voltage near3 negative) and ((phase or coil) with (switch\$3 near3 (time or period)) and ((phase or coil) near3 connect\$6) with (positive or negative)) and (switch\$3 near2 (state or stage)) | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 16:17 |
| L15 | 30  | 14 and efficiency   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 16:18 |
| L16 | 10  | 15 and (phase near3 shift\$6)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 16:54 |
| L17 | 204 | 388/812.ccls.   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 16:59 |
| L18 | 201 | 388/809.ccls.   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 16:59 |
| L19 | 183 | 388/813.ccls.   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 16:59 |
| L20 | 412 | 388/814.ccls.   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 16:59 |
| L21 | 755 | (17 or 19 or 20)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 17:00 |
| L22 | 0   | 21 and (switch\$3 near3 stage) and ((positive or negative) near3 voltage) and (first adj phase) and (second adj phase) and (third adj phase)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 17:02 |

## EAST Search History

|     |    |   |   |    |    |                  |
|-----|----|---|---|----|----|------------------|
| L23 | 0  | 21 and efficiency and (continuous\$2 with connect\$6 with phase) and (switch\$3 near3 stage) and ((positive or negative) near3 voltage)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 17:04 |
| L24 | 9  | 21 and motor and inverter and efficiency and (three adj phase)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 17:05 |
| S1  | 0  | (brushless adj2 motor) and inverter and ((variable adj frequency adj drive) or vfd) and (first adj3 voltage) and (second adj3 voltage) and (efficiency or ((decreas\$3 or minimiz\$6 or low\$5) near3 losses)) and (phases with (period or time or cycle) with (switch\$6 near5 state)) | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 18:37 |
| S2  | 39 | (brushless adj2 motor) and inverter and (efficiency or ((decreas\$3 or minimiz\$6 or low\$5) near3 losses)) and (phases with (period or time or cycle) with (switch\$6 near5 state))  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/12 11:39 |
| S3  | 18 | S2 and (dc adj motor)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 17:34 |
| S4  | 39 | (brushless adj2 motor) and inverter and (efficiency or ((decreas\$3 or minimiz\$6 or low\$5) near3 losses)) and (phases with (period or time or cycle) with (switch\$6 near5 state))  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 18:37 |
| S5  | 18 | S4 and (dc adj motor)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 18:37 |
| S6  | 11 | S5 and vector   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 18:55 |
| S7  | 11 | S6 and (current near3 signal) and (time or period)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 19:01 |
| S8  | 9  | S6 and (current near3 signal) and ((time or period) with (\$4emf or load))  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 18:57 |
| S9  | 11 | S7 and (switch\$5 near3 state)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 22:50 |

## EAST Search History

|     |    |  |   |    |    |                  |
|-----|----|--|---|----|----|------------------|
| S10 | 39 | (brushless adj2 motor) and inverter and (efficiency or ((decreas\$3 or minimiz\$6 or low\$5) near3 losses)) and (phases with (period or time or cycle) with (switch\$6 near5 state)) | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 22:50 |
| S11 | 18 | S10 and (dc adj motor)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 22:50 |
| S12 | 11 | S11 and vector   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 22:50 |
| S13 | 9  | S12 and (current near3 signal) and ((time or period) with (\$4emf or load))  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 22:50 |
| S14 | 9  | S13 and (first near2 voltage) and (second near3 voltage)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 22:55 |
| S15 | 0  | ep-0128796-\$.did.   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 22:56 |
| S16 | 0  | ep-00128796-\$.did.  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 22:56 |
| S17 | 2  | "4259620".pn.  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | ON | 2007/12/11 22:57 |